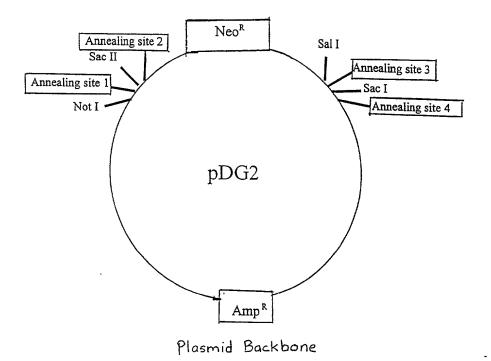


Figure 2A



pDG2:

GTTAACTACGTCAGGTGGCACTTTTCGGGGAAATGTGCGCGGAACCCCTATTTGTTTATTTTCTAAATACATTCAAATA TGTATCCGCTCATGAGACAATAACCCTGATAAATGCTTCAATAATATTGAAAAAGGAAGAGTATGAGTATTCAACATTTC CETGTCCCCTTATTCCCTTTTTTGCCGCCATTTTGCCTTCCTGTTTTTGCTCACCCAGAAACGCTGGTGAAAGTAAAAGA TGCTGAAGATCAGTTGGGTGCACGAGTGGGTTACATCGAACTGGATCTCAACAGCGGTAAGATCCTTGAGAGTTTTCGCC COGAAGAAOGTTCTCCAATGATGAGCACTTTTAAAGTTCTCCTATGTGGCCCGGTATTATCCCGTGTTGACGCCCGGCCAAGAGCAACTOGGTOGCOGCATACACTATTCTCAGAATGACTTGGTTGAGTACTCACCAGTCACAGAAAAGCATCTTACGGA TCGGAGGACCGAAGGAGCTAACCGCTTTTTTGCACAACATGGGGGATCATGTAACTCGCCTTGATCGTTGGGAACCGGAG CTGAATGAAGCCATACCAAACGACGAGCGTGACACCACGATGCCTGTAGCAATGGCAACAACGTTGCGCAAACTATTAAC GCTOGGOOCTTOCGGCTGGCTGTTTATTGCTGATAAATCTGGAGCCGGTGAGCGTGGGTCTCGCGGTATCATTGCAGCA CTGGGGCCAGATGGTAAGCCCTCCCGTATCGTAGTTATCTACACGACGGGGAGTCAGGCAACTATGGATGAACGAAATAG ACAGATOGCTGAGATAGGTGCCTCACTGATTAAGCATTGGTAACTGTCAGACCAAGTTTACTCATATATACTTTAGATTG ATTTACCCCGGTTGATAATCAGAAAAGCCCCCAAAAACAGGAAGATTGTATAAGCAAATATTTAAATTGTAAACGTTAATA TTTTGTTAAAATTCGCGTTAAATTTTTGTTAAATCAGCTCATTTTTTAACCAATAGGCCGAAAATCGGCAAAATCCCTTAT AAATCAAAAGAATAGOCOGAGATAGGGTTGAGTGTTGTTOCAGTTTGGAACAAGAGTOCACTATTAAAGAAOGTGGACTC CAAOGTCAAAGGGCGAAAAACCGTCTATCAGGGCGATGGCCCACTAOGTGAACCATCACCCAAATCAAGTTTTTTGGGGT CGAGTTCCCGTAAAGCACTAAATCGGAACCCTAAAGGGAGCCCCCATTTAGAGCTTGACGGGGAAAGCGAACGTGGCCGA GAAAGGAAGGAAGAAAGCGAAAGGGAGCGGGGGCTAGGGGGCTGGCAAGTGTAGCGGTCACGCTGCGCGTAACCACCACA CCCCCCCCCCTTAATCCCCCCCTACACGCCCCGTAAAAGGATCTAGGTGAAGATCCTTTTTGATAATCTCATGACCAAAA TCCCTTAACGTGAGTTTTCGTTCCACTGAGGGTCAGACCCGTAGAAAAGATCAAAGGATCTTCTTGAGATCCTTTTTTT TCTTTTTCCGAAGGTAACTGGCTTCAGCAGAGCGCAGATACCAAATACTGTTCTTCTAGTGTAGCCGTAGTTAGGCCACC ACTTCAAGAACTCTGTAGCACCGCCTACATACCTCGCTGCTAATCCTGTTACCAGTGGCTGCCAGTGGCGATAAG TOSTGTCTTACOGGGTTGGACTCAAGACGATAGTTACOGGATAAGGCGCACGGTCGGGCTGAACGGGGGGTTCGTGCAC ACAGCCCAGCTTGGAGCGAACGACCTACACCGAACTGAGATACCTACAGCGTGAGCTATGAGAAAGCGCCACGCTTCCCG AAGGGAGAAAGGCGGACAGGTATCCGGTAAGCGGCAGGTCGGAACAGGAGAGCGCGCGAGGCTTCCAGGGGGAAAC GCCTGGTATCTTTATAGTCCTGTCGGGTTTCGCCACCTCTGACTTGAGCGTCGATTTTTGTGATGCTCGTCAGGGGGGCG GAGCCTATGGAAAAACGCCAGCAACGCGGCCTTTTACGGTTCCTGGCCTTTTGCTGGCCTTTTGCTCACATGTAATGTG AGTTAGCTCACTCATTAGGCACCCCAGGCTTTACACTTTATGCTTCCGGCTCGTATGTTGTGGGAATTGTGAGCCGGATA ACAATTTCACACAGGAAACAGCTATGACCATGATTACGCCAAGCTACGTAATACGACTCACTAGGCGGCCGCGTTTAAAC AAtgtgctcctctttggcttgcttCCGGGGccaagccagacaagaaccagTTGACGTCAAGCTTCCCGGGACGCGTGCT AGOGGOGGOGAATTOCTGCAGGATTOCAGGGOCCCTGCAGGTCAATTCTACCGGGTAGGGGAGGCGCTTTTCCCAACG CASTCTGGASCATGCGCTTTAGCAGCCCCGCTGGCACTTGGCGCTACACAAGTGGCCTCTGGCCTCGCACACATTCCACA TOCACOGGTAGOGCCAACOGGCTCOGGTTCTTTGGTGGCCCCTTOGCGCCCACCTTCTACTCCCCTAGTCAGGAAGGTTC CACOGCTGAGCAATGGAAGOGGGTAGGGCTTTGGGGCAGOGGCCAATAGCAGCTTTGCTCCTTTCTGGGCTCAGA GGCATTCTCGCACGCTTCAAAAGCGCACGTCTGCCGCGCTGTTCTCCTCTTCCTCATCTCCGGGCCTTTCGACCTGCAGC CAATATGGGATGGCCATTGAACAAGATGGATTGCACGCAGGTTCTCCGCCCCTTGGGTGGAGAGGCTATTCCGCTATG ACTGGGCACAACAGACAATCGGCTGCTCTGATGCCGCCGGTGTTCCGGCCGCTCAGGGCGCGCCCCGGTTCTTTTTGTC AAGAOGACCTGTCCGGTGCCCTGAATGAACTGCAGGACGAGGCGGGGGGTATCGTGGCCACGACGGGGGTTCC TTGCGCAGCTGTGCTCGACGTTGTCACTGAAGCGGGAAGGGACTGCTATTGGGCGAAGTGCCGGGCAGGATCTCC TGTCATCTCACCTTGCTCCTGCCGAGAAAGTATCCATCATCATCGCTGATGCCAATGCGGCGGCTGCATACGCTTGATCCGGCT TGATCTGGACGAGGAGCATCAGGGGCTCGCGCCAGCCGAACTGTTCGCCAGGCCTCAAGGCGCGCATGCCCGACGGCGATG ATCTCGTCGTGACCCATGGCGATGCCTGCTTGCCGAATATCATGGTGGAAAATGGCCGCTTTTCTGGATTCATCGACTGT GGCCGGCTGGGTGTGGCGGACCGCTATCAGGACATAGCGTTGGCTACCCGTGATATTGCTGAGAGAGCTTGGCGGCGAATG GGCTGACCGCTTCCTCGTGCTTTACGGTATCGCCGCTCCCGATTCGCCATCGCCTTCTATCGCCTTCTTGACGAGT TCTTCTGAGGGGATCGATCCGTCTGTAAGTCTGCAGAAATTGATCTATTAAACAATAAAGATGTCCACTAAAATGG AAGTTTTTCCTGTCATACTTTGTTAAGAAGGGTGAGAACAGAGTACCTACATTTTGAATGGAAGGATTGGAGCTACGGGG GTGGGGTGGGTGGGATTAGATAAATGCCTGCTCTTTACTGAAGGCTCTTTACTATTGCTTTATGATAATGTTTCATAG TTGGATATCATAATTTAAACAAGCAAAACCAAATTAAGGGCCAGCTCATTCCTCCCACTCATGATCTATAGATCTATAGA TCTCTOGTGGGATCATTGTTTTTCTCTTGATTCCCACTTTGTGGTTCTAAGTACTGTGGTTTCCAAATGTGTCAGTTTCA TAGCCTGAAGAACGAGATCAGCAGCCTCTGTTCCACATACACTTCATTCTCAGTATTGTTTTGCCAAGTTCTAATTCCAT CAGAAGCTGACTCTAGATCTGGATCCGGCCAGCTAGGCCGTCGACTCGACTCATCATCAAGGTACCAAggtcctcgctctgtq tccgttGAGCTCgacgacacaggacacgcaaaTTAATTAAGGCCGGCCCGTACCCTCTAGTCAAGGCCTTAAGTGAGTCG TATTACGGACTGGCCGTCGTTTTTACAACGTCGTGACTGGGAAAACCCTGGCGTTACCCAACTTAATCGCCTTGCAGCACA TOCCCCTTTOGCCAGCTGGOGTAATAGOGAAGAGGCCCGCACCGATCGCCCTTCCCAACAGTTGCGCAGCCTGAATGGCG

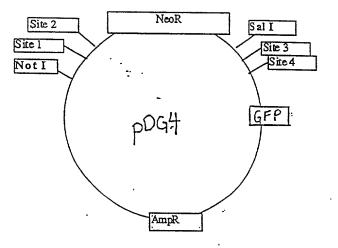


Fig 3A

pDG4: GTTTA-IAGTAATCA-TTACGGGGTCATTAGTTCATAGGCCATATATGCAGTTCCGGGTTACATAACTTACGGTAAATGG EGGCTGACCGCCCAAGGACCCCCCCCCCATTGACGTCAATAATGACGTATGTTCCCATACTAACGCCAATAGGGA CTTTC:ATTC:ACGTC:ATGGGTGGGTATTTACGGTAAACTGCCCACTTGCCAGTACATCAAGTGATCATATGCCAAGT ACGCCCCTATTGACGTCAATGACGGTAAATGCCCCCCCTGCCATTATGCCAGTACATGACTTATGGGACTTTCCTAC TTGGCASTACATCTACGTATTAGTCATCGCTATTACCATGGTGATGGGGTTTTGGCAGTACATCAATGGGGTAGATAGC GGTT: EACTCAGGGGATTTOCAAGTCTCCACCCCATTGAGGTCAATGGGAGTTTGTTTTGGCAGCAAAATCAACGGGAG TTTO CANATOTO CANCACTO COCCATTO ACCEANATO GOOGTACOOTO TACOCTO CANCACTO TATATA ACCAC ACCTESTITIAGTGA:COCTCAGATCCCCTACCCCTACCCCTACCCACCATCCTGACCAACCCCTACCAGCTGTTCACCCG GCTG::SCCCATCC:GGTCGACCTGGACCGGGGTAAACGGCCACAGTTCACGGTGTGCGGGAGGGCGAGGGCGATG CCACCTACGGCAAGTGAACTTGAAGTTCATCTGCACACGGGCAAGGTGCCGTGCCGTGCCGACACCTGGGGCAAC CTGACTTACGGCGTGCAGTGCTTCAGCCGCTACCCCGACCACATGAAGCAGCACGACTTCTTCAAGTCCGCCATGCCCGA ACAACCACTACCTG=SCACCCAGTCCCCCTGAGCAAAGACCCCCAACGAGAGGCCCCATCACATGGTCCTGCTGCAGTTC GTCACCCCCCCCCATCACTCTCCCCATGGACCACCTGTACAAGTCCCGACTCAGATCCACCGATCTAGATAACT CATAL-CAGCCATECCACATTIGTICAGGGTTTTACTTGCTTTAARAAACTOGCGGATACTGCCTGARACTGCAGATTGCAATTGCTAGATTAATTGCTAGATTAATTGCAGCTTATAATGCTAATAAAGCAATAAAGCAATAAAGCAATAAAGCAATTTC ACAR-BARGCATTTTTTCACTGCATTCTRGTTGTGGTTTGTCCARACTCALCARGTATCTTRACGCGACTAGTCA GGTGGCACTTTTCGGGGAAATGTGCGCGGAACCCCTATTTGTTTATTTTTCTAAATACATTCAAATATGTATCCCCCGAACCCCTATTTGTTTATTTTTCTAAATACATTCAAATATGTATCCCCCGAACCCCTATTTGTTTATTTTTCTAAATACATTCAAATATGTATCCCCC GAGREFATARCOCTERTRARTGCTTCRATRATATTGRARARAGGRAGRGTRTGRGTRTTCRACRITTCOGTGTOCCCTTA TTOOCTTTTTTGGGGCATTTTGGCTGAGGTTTTGGCTCACCCAGAAACCCTGGTGAAAGTAAAAGATGCTGAAGATGAG TTGGGGCACGAGTGGGTTACATCGAACTGGATCTCAACAGGGGTAAGATCTTGAGAGTTTTGGCCCCGAAGAAGGTTC TOTALICATION CACTITITA MATTETE CTATERES COCCUTATIAN CONTENTIA COCCUTACACIÓN CACTITITA MATTETE CONTENTA CACTATICA CAC acacalitatocactoctocxataaccatgactgataacactgocgocaacttacttctgacaacgatoggagacogaa GCACCTARCOCCTTTTTTGCACAACATGGGGACCATGTAACTGGCCTTGATGGTAACGGAACGAATGAACGCA TACCLAACGACCACGGTGACACGACGCTGTAGCAATGGCAACAACGTTGGGCAACTATTAACTGGGAACTACTT ACTCTAGCTTCCCGGCAACAATTAATAGACTGGATGGAGGGGGATAAAGTTGCAGGACCACTTCTGCGCTCGGCCCTTCC GCCTC-CTCCTTTA-TGCTGATAAATCTGGAGCCGGTGAGCGTGGGTCTCCCGGTATCATTGCAGCACTGGGGCCAGAT GATALTCAGA AAAGCCCCAAAAACA GGAAGATTGTATA AGCAAATA.TTAAATTGTAAACGTTAATATTTTGTTAAAATT COGETTABATTTTTGTTBAATCAGCTCATTTTTTBACCAATAGGCT_BAATCGCCABAATCCCTTATBAATCAAAGRAT ACCCCGAGATAGGGTTGAGTGTTGTTCCAGTTTGGAACAAGAGTCCGCTATTBAAGAACGTGGACTCCAAGGTCAAAGG CCARRADOCTICTATICACCCCATICOCCACTACCTICACCCACCARATICACTTTTTTTCCCCTCCACCTAA CANACCEARCCECCCTRCGCCCTTCSCRACTCTCCCTCCCCTTRACCACACACACCCCCCCTTR ATCCCCCCTRCACCGCCCCTRARACCRTCTRACGTCACCATCCTTT. TCATRATCTCATCACCARATCCCTTRACCTCA GTRACTOCCTTCAGCAGAGGCCAGATACCARATACTGTTCTTCTMG_GTRGCCGTAGTTAGGCCACCACCTTCAAGACTC
TGTAGCACGGCTACATACCTCGCTCTGCTAATACTGTTTACCAGTGGCCAGTGGCGATAAGTCGTGTCTTACCA GETTESACTICAAGROCRITACOGGRITAAGGGCCGGCGGTCGGGTTGAGGGGGGGTTGGTGCACACGCCCACGTTG GAGGGAAGGACCTACACGGAACTGAGATACCTACAGGGTGAGCTATEAGRAAGGCCCACGCTTCCGGAAGGGAAAAGG ACCTOSCITOSTGCAGGACGTGACAAATGGAAGTAGCACGTCTCACTAGTCTOTIGCAGATGGACAGCACOCCTGAGCAA TOGAAGCGGGTAGGCCTTTGGGCCAGCGCCCAATAGCAGCTTTGCTTLTTTCCTTTTTTGGGCTCAGAGGETGGAAGGGT CCGGTGCCCTGAATGAMCTGCAGGACGACGCACGCCCCCTTATCGTGCCTGCCGCAGAGGGGGGTTTCCTTGGGCACGGGC CTCGACGTTGTCACTGAMCGGGAAGGGACTGCCTCCTATTGGGGCAMGTCCCGGGCAGATCTCTTGTCATCTACTC TGCCTACCGCTATCAGGACATACCGTTGGCTACCGGTATATTGCTGAAGACTTGGCGCCGAATGGGCTGAACGGTTC CTCGTGCTTTACGGTATGCCGCTCCCCATTGGCAGGCACTCGCCTCTATGGCTTCTTGAGGAGTTCTTCTGAGGAGT GGUATTACATAAATGCCTGCTCTTTTACTGAAGGCTCTTTACTATTGCTTTATGATAATGTTTCATAGTTGGATATCATA TTTAAACAAGCAAAACCAAATTAAGGGCCAGCTCATTGCTCCCACTCATGATCTATAGATCTATAGATCTATAGATCTCTCGTGGGAT CATTGITTTTCTTGATTOCCACTTTGTGGTTCTAAGTACTGTGGTTTCAAATGTGTCAGTTTCATAGCCTGAAAAAC GAGATCAGCAGCCTCTGTTGCACATACACTTCATTCTCAGTATTGTTTTGCCAAGTTCTAATTCCATCAGAAGCTGACTC TAGATUTGGATCCGGCCAGCTAGGCCGTCGACCTCGAGTGATCAGGTACCAAggtcctcgctctgtgtccggttGACTCGgccaggtccaggcaagtTAATTAAGGCCGGCCCGTACCCTCTATTCAAGGCCTTAAGTGATTATTAAGGCCGCCGTACTCTATTCAAGGCCTTAAGTGATTATTACGGATTG CONTOTTTTACAAGTCOTGACTGGGAAAACCCTGGGTTTACCCA-ACTTAATCGCCTTGCACACACTCGCCCTTTGGC AGCTGGGTAATAGGGAAGAGGCCCGCCCCCACGGTTGCCCAACAGTTGGGCAGCCTGAATGGGGAATGGCCTTCCC

TTGGTAATAAAGCCCGCCTTCGGCGGGCTTTTTTTT

Annealing site	Sequence	Sequence after digestion
		Could Oleganing
1	5 tgtgctcctctttggcttgcttccaa 3/	
2	3' acacgaggagaaaccgaacgaaggtt 5' ctggttcttgtctggcttggcccaa 3'	3'
	3' gaccaagaacagaccgaaccgggtt5'	5' ctggttcttgtctggcttggcccaa 3'
3	5' ggtcctcactctatatatatati	
	ggtcctcgctctgtgtccgttgaa3'	5' ggtcctcgctctgtgtccgttgaa3'
4	5' tttgggtgtcotstate5'	
<u>-</u>	3' aaacgcacaggacaca	5'. tttgcgtgtcctgtgt
	3' aaacgcacaggacacagcagctt 5'	5'. tttgcgtgtcctgtgtcgtcgaa3'
		tt 5'

Fig 4

Annealing	Sequence	Sequence after digestion
1	5' AAtgtgctcctctttggcttgcttCCGC 3'	5' AA 3'
	3' Ttacacgaggagaaaccgaacgaagg 5'	3' Ttacacgaggagaaaccgaacgaagg 5'
2	5' AActggttcttgtctggcttggcCCGC 3'	5' AA 3'
	3' Ttgaccaagaacagaccgaaccggg 5'	3' Ttgaccaagaacagaccgaaccggg 5'
3	5' AAggtcctcgctctgtgtccgttGAGCT 3'	5' AA 3'
_	3' Ttccaggagcgagacacaggcaac 5'	3' Ttccaggagcgagacacaggcaac 5'
4	5' AAtttgcgtgtcctgtgtcgtcGAGCT 3'	5' AA 3'
	3' Ttaaacgcacaggacacagcagc 5'	3' Ttaaacgcacaggacacagcagc 5'

Fig 5

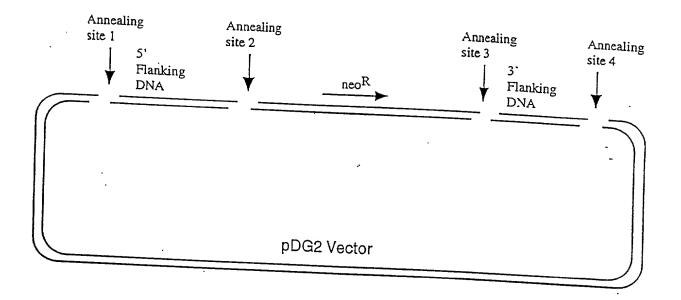


Fig 6

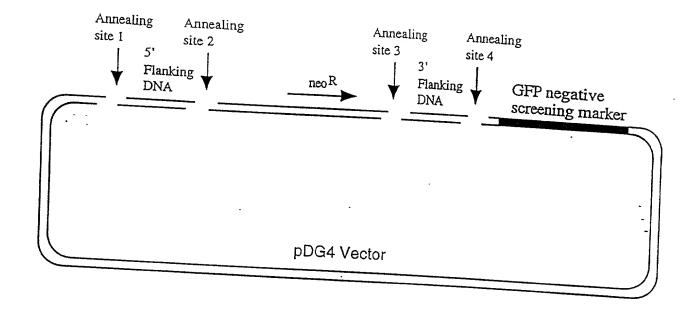


Fig 7

Oligo#	Sequence (5' to 3')
174	ATGACCGCTCAGGAAACCTGTTGCA
180	ATAGGCATAGTAGGCCAGCTTGAGG
454	tgtgctcctctttggcttgcttccAATTAACCCTCACTAAAGGGAACGAAT
463	ctggttcttgtctggcttggcccaaTGCAACAGGTTTCCTGAGCGGTCAT
464	ggtcctcgctctgtgtccgttgaaCCTCAAGCTGGCCTACTATGCCTAT
42	tttgcgtgtcctgtgtcgtcgaaCGACTAATACGACTCACTATAGGGCG
151	GCCAATGGACTCTTAGTTTTGGAAC
155	GTTCTGGCAAACAAATTCGGCGCAC
454	tgtgctcctctttggcttgcttccAATTAACCCTCACTAAAGGGAACGAAT
465	ctggttcttgtctggcttggcccaaGTTCCAAAACTAAGAGTCCATTGGC
466	ggtcctcgctctgtgtccgttgaaGTGCGCCGAATTTGTTTGCCAGAAC
1	GAACCTTGGTGTGCCAAGTTACTTC
2	GAACTTTGGCTGAACCCCTTGTTCT
41	tgtgctcctctttggcttgcgttgaaCGACTAATACGACTCACTATAGGGCG
38	ctggttcttgtctggcttggcccaaGAAGTAACTTGGCACACCAAGGTTC
40	ggtectegetetgtgtecgttgaAGAACAAGGGGTTCAGCCAAAGTTC
37	tttgcgtgtectgtgtegtegAATTAACCCTCACTAAAGGGAACGAAT
540	ATGCCGGATCTCCTACTGCGCCC
546	TGTCATAGTAGACAGCGATGGAACG
445 667	GACAAGAACCAGTTGACGTCAAGCTTCCCGGGACGCGTGCTAGCGGCGCGCCGCCGCCGCCGCCGCCGCCGCCGCCAGTAGTAGGAGATCCGGCAT
668	ggtcctcgctctgtgtccgttgaaCGTTCCATCGCTGTCTACTATGACA
907	ctggttcttgtctggcttggccaaAAAGCCGACAGCCACGCTCACAAGC
908	ggtcctcgctctgtgtccgttgaaGCCCAATGCCACAGAGACAGAATGT
1157	ctggttettgtetggettggeecaaGTTGGATCCTCTCCAAGGCCCCATCT
1158	ggteetegetetgtgteegttgaaCTCCAGTGCCGAGTGTGTGGGGACAG

Figure 8